

# REPORT ON MACHINERY.

No. 22217

Port of Glasgow

Received at London Office

TUES. 1 NOV 1904

No. in Survey held at Paisley

Date, first Survey 21<sup>st</sup> March

Last Survey

8.9. 1904

Reg. Book.

Ship on the Boilers for S.S. "Erny"

(Number of Visits 13)

Master

Built at Port Glasgow By whom built Russell & Co

Tons }  
Gross  
Net

When built 1904

Engines made at Grenock

By whom made J. S. Kincaid & Co

when made 1904

Boilers made at Paisley

By whom made A. F. Craig & Co (333) Ltd

when made 1904

Registered Horse Power

Owners Fratelli Losbich

Port belonging to Trust

Nom. Horse Power as per Section 28

Is Refrigerating Machinery fitted

Is Electric Light fitted

## ENGINES, &c.—Description of Engines

Dia. of Cylinders	Length of Stroke	Revs. per minute	No. of Cylinders	No. of Cranks
Is the screw shaft fitted with a continuous liner the whole length of the stern tube				
Is the after end of the liner made water tight				
If the liner is in more than one length are the joints burned				
If the liner does not fit tightly at the part between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive				
If two liners are fitted, is the shaft lapped or protected between the liners				
Length of stern bush				
Dia. of Tunnel shaft as per rule	Dia. of Crank shaft journals as per rule	Dia. of Crank pin	Size of Crank webs	Dia. of thrust shaft under collars
Dia. of screw	Pitch of screw	No. of blades	State whether moveable	Total surface
No. of Feed pumps	Diameter of ditto	Stroke	Can one be overhauled while the other is at work	
No. of Bilge pumps	Diameter of ditto	Stroke	Can one be overhauled while the other is at work	
No. of Donkey Engines	Sizes of Pumps	No. and size of Suctions connected to both Bilge and Donkey pumps		
In Engine Room				
In Holds, &c.				
No. of bilge injections	sizes	Connected to condenser, or to circulating pump	Is a separate donkey suction fitted in Engine room & size	
Are all the bilge suction pipes fitted with roses				
Are the roses in Engine room always accessible				
Are the sluices on Engine room bulkheads always accessible				
Are all connections with the sea direct on the skin of the ship				
Are they Valves or Cocks				
Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates				
Are the discharge pipes above or below the deep water line				
Are they each fitted with a discharge valve always accessible on the plating of the vessel				
Are the blow off cocks fitted with a spigot and brass covering plate				
What pipes are carried through the bunkers				
How are they protected				
Are all pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times				
Are the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges				
When were stern tube, propeller, screw shaft, and all connections examined in dry dock				
Is the screw shaft tunnel watertight				
Is it fitted with a watertight door				
worked from				

## BOILERS, &c.—

(Letter for record (S)) Total Heating Surface of Boilers 4530 \$.

Is forced draft fitted

No. and Description of Boilers Two Single Ended

Working Pressure 180 lbs

Tested by hydraulic pressure to 360 lbs

Date of test 8.9.04 Can each boiler be worked separately

Area of fire grate in each boiler 66 \$

No. and Description of safety valves to each boiler

Area of each valve

Pressure to which they are adjusted

Are they fitted with easing gear

Smallest distance between boilers or uptakes and bunkers or woodwork

Mean dia. of boilers 15'-6" Length 10'-6" Material of shell plates slut

Thickness 1 1/4" Range of tensile strength 28,600 Are they welded or flanged no

Descrip. of riveting: cir. seams D.R.L. long. seams D.B.S.

Diameter of rivet holes in long. seams 1 1/16" Pitch of rivets 9"

Lap of plates or width of butt straps 19 1/2"

Per centages of strength of longitudinal joint

Working pressure of shell by rules 180 lbs

Size of manhole in shell 16 x 12

Size of compensating ring 27 x 31

No. and Description of Furnaces in each boiler 3 Dughlon

Material slut Outside diameter 4'-2 1/4"

Length of plain part

Thickness of plates

Description of longitudinal joint weld

No. of strengthening rings

Working pressure of furnace by the rules 187

Combustion chamber plates: Material slut Thickness: Sides 2 1/32" Back 2 1/32" Top 2 3/32" Bottom 1 1/16"

Pitch of stays to ditto: Sides 9 x 9 Back 9 x 9 Top 9 x 10 1/2

Are stays fitted with nuts or riveted heads nuts Working pressure by rules 183 lbs

Material of stays slut

Diameter at smallest part 2.07 Area supported by each stay 81

Working pressure by rules 180 End plates in steam space:

Material slut Thickness 1 9/32"

Pitch of stays 21 x 20 1/2 How are stays secured D. nuts

Working pressure by rules 180 Material of stays slut

Diameter at smallest part 7.5 Area supported by each stay 425

Working pressure by rules 180 Material of Front plates at bottom slut

Thickness 3/4" Material of Lower back plate slut

Thickness 7/8" Greatest pitch of stays 16 1/2"

Working pressure of plate by rules 180 lbs

Diameter of tubes 3 1/4" Pitch of tubes 4 1/2"

Material of tube plates slut Thickness: Front 3/4" Back 3/4"

Mean pitch of stays 9"

Pitch across wide water spaces 14 1/2"

Working pressures by rules 200 lbs Girders to Chamber tops: Material slut

Depth and thickness of girder at centre 9 x 3 1/4 x 2 Length as per rule 29 1/2

Distance apart 10 1/2 Number and pitch of Stays in each 2-9"

Working pressure by rules 190 Superheater or Steam chest; how connected to boiler none

Can the superheater be shut off and the boiler worked separately

Diameter

Length

Thickness of shell plates

Material

Description of longitudinal joint

Diam. of rivet

Pitch of rivets

Working pressure of shell by rules

Diameter of flue

Material of flue plates

Thickness

stiffened with rings

Distance between rings

Working pressure by rules

End plates: Thickness

How stayed

Working pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

W1601-0143

**DONKEY BOILER**— No. *1* Description *Cylindrical Hull*  
 Made at *Paisley* By whom made *A F Craig & Co* When made *1904* Where fixed  
 Working pressure *80 lbs* Tested by hydraulic pressure to *160 lbs* No. of Certificate *7251* Fire grate area *20 1/2* Description of safety valves  
 No. of safety valves Area of each Pressure to which they are adjusted If fitted with easing gear If steam from main boilers can enter the donkey boiler  
 Dia. of donkey boiler *9'-0"* Length *8'-0"* Material of shell plates *steel* Thickness *15/32"* Range of tensile strength *28 tons* Descrip. of riveting long. seams *D. R. D. B.* Dia. of rivet holes *7/8"* Whether punched or drilled *drilled* Pitch of rivets *3 7/16"*  
 width of straps *7 3/8"* Per centage of strength of joint Rivets *114* Thickness of shell crown plates — Radius of do. — No. of Stays to do. —  
 Lap of plating *7 3/8"* Plates *78* Thickness of shell crown plates — Radius of do. — No. of Stays to do. —  
 Dia. of stays. — Diameter of furnace *Top 2'-8" Bottom —* Length of furnace *5'-0"* Thickness of furnace plates *13/32"* Description of joint *weld* Thickness of furnace crown plates — Stayed by — Working pressure of shell by rules *86 lbs*  
 Working pressure of furnace by rules *90 lbs* Diameter of uptake — Thickness of uptake plates — Thickness of water tubes —  
**SPARE GEAR.** State the articles supplied:—

The foregoing is a correct description,  
 Manufacturer.

*A F Craig & Co Ltd  
 Archd. Vain Secy*

Dates of Survey while building  
 During progress of work in shops — 1904, March 21, 28. Apr 13, 28. May 4, 14, 24. June 27. July 6, 20, 28. Aug 10, 17, 24.  
 During erection on board vessel — 30. Sept 8.  
 Total No. of visits *13*  
 Is the approved plan of main boiler forwarded herewith *Yes*  
 " " " donkey " " " *Yes*

**General Remarks** (State quality of workmanship, opinions as to class, &c.)

*These boilers have been constructed under Special Survey & are of good materials & workmanship. They have been sent to Greenock to be fitted on board.*

Certificate (if required) to be sent to the Surveyors are requested not to write on or below the space for Committee's Minute.

The amount of Entry Fee..	£	<i>1/3 due</i>	When applied for,
Special .. .. .	£	<i>Glasgow</i>	.....19.....
Donkey Boiler Fee .. .. .	£		When received,
Travelling Expenses (if any) £			.....19.....

*H Gardner-Smith & J W Dimmock*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute *Glasgow 24 OCT 1904*

Assigned *Deferred for completion*



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